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Dear Marianne:

About transnucleotidation reaction--nothing more was ever done beside that preliminary stuff of Heppel's. Actually, I may be looking into it again, but certainly not extensively,at least not in the near future. I don't know why Paul said he thought it no longer valid.

In the next few weeks I'll be writing up arsenolysis experiments and will send you a copy of the very first draft as soon as it is ready. Off hand it is still difficult to decide about mechanisms. The oligonucleotides stimulate 50-fold or more, under optimal concentrations. The enzyme alone will slowly arsenolyze however, so requirement is not absolute by any means. The enzyme has a $^{280}/_{260}$ greater than 1.6 and heated enzyme does not stimulate the reaction. Actually it inhibits somewhat. Enzyme is the 300-fold purified stuff.

We have done quite a bit of kinetics on the reaction, and these experiments show that the binding of diphosphate and primer to the enzyme are related events. Furthermore the kinetics definitely indicate one enzyme for all the diphosphates. GDP behaves like the others in all respects except for requiring a little more arsenate for optimal reaction. Tentatively I would say that XMP-E is unlikely, at least starting from nucleoside diphosphate. On the other hand this presents difficulties in interpreting transnucleotidation, unless one postulates that you can get an AMP enzyme complex starting from polymer. This is not, of course, very satisfactory.

Have you heard anything from Littauer about recent S-RNA-polynucleotide phosphorylase experiments?

Sorry that I won't be at Gordon Conference. It is cutting things a little too close for baby's arrival. Can't we get you down here for a day or so?

Best regards,

Maxine Singer

MS:meg